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# **2nd Annual Hampton University Information Assurance Symposium**

**Building Information Assurance Capacity and Improving Infrastructure at Minority Serving Institutions**

**April 2, 2005  
Hampton University  
Student Center**



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# Sponsors

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- Hampton University
- Elizabeth State University
- Carnegie Mellon's Software Engineering Institute
  - CERT ® Coordination Center
  - Carnegie Mellon University
- Association of Computer and Information Science Engineering Departments at Minority Institutions (ADMI)

# Purpose

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- To provide an interface with governmental agencies and information assurance (IA) research institutions.
- ***To provide a forum that will serve in the:***
  - ***Building of Information Assurance Capacity and Improving Infrastructure at Minority Serving Institution's (MSI's).***
- To serve as a model for other regional workshops for minority serving institutions.

# Target Regional Institutions: CIO's, CS Chairs and Faculty

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- Hampton Univ.
- Norfolk State Univ.
- Howard Univ.
- Virginia Union Univ.
- Virginia State Univ.
- St. Paul's College
- Elizabeth City State Univ.
- Delaware State Univ.
- Bennett College
- Univ. of the District of Columbia
- Univ. of Maryland Eastern Shore
- Bowie State Univ.
- North Carolina A&T State Univ.
- Winston Salem State Univ.
- Morgan State Univ.
- Coppin State College
- North Carolina Central Univ.
- St. Augustine's College

# Agenda

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- **7:30 Continental Breakfast**

- **8:30**

- **Welcome Address**
- **Introduction of Guests**

- **Comments by Guests**

- **9:15**

- **Interaction with guests and press; photo opportunities, etc.**

- **10:00**

- **Break**

- **10:15**

- **Keynote Address**
  - **Richard Pethia (Scroll down for bio)**
    - **“Keynote Address”**

- **11:30**

- **Andrea Lawrence (Scroll down for bio)**
  - **“ADMI’s Role in Information Assurance”**

# Agenda

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■ 12:00

■ **Luncheon**

- Linda Northrop ([\*Scroll down for bio\*](#))
  - “Putting the ‘Plug’ into Plug and Play”

■ 1:30 (Afternoon Technical Presentations)

■ **Scott Hissam** ([\*Scroll down for bio\*](#))

- “Prediction-Enabled Component Technology”

■ 2:30

■ **Break**

■ 2:45

■ **Daniel Plakosh** ([\*Scroll down for bio\*](#))

- “[Coding Flaws That Lead to Security Failures](#)”

■ 3:45

■ **Break**

■ 4:00

■ **Carol Sledge** ([\*Scroll down for bio\*](#))

- “Future: Survivability and Information Assurance Curriculum”

■ 5:00 Closing Remarks

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# Presenters' Biographical Information



# Rich Pethia

- Richard Pethia is the director of the CERT® Centers at Carnegie Mellon University's Software Engineering Institute (SEI). The CERT Centers include the CERT Coordination Center and the CERT Analysis Center. The SEI has operated the CERT/CC since 1988, providing a central response and coordination facility for global information security incident response and countermeasures for threats and vulnerabilities. The recently established CERT Analysis Center addresses the threat posed by rapidly evolving, technologically advanced forms of cyber attacks, and builds upon the work of the CERT Coordination Center.
- In addition to directing the CERT Centers, Pethia manages the SEI Networked Systems Survivability Program, focusing on improving both the practices and understanding of security and survivability issues relating to critical information infrastructures.
- Before coming to the SEI, Pethia was director of engineering at Decision Data Computer Company, a computer system manufacturer in Philadelphia, Pennsylvania. There, he was responsible for engineering functions and resource management in support of new product development.
- Pethia also was manager of operating systems development for Modular Computer Corporation in Fort Lauderdale, Florida. While there, he lead development efforts focused on real-time operating systems, networks, and other system software in the application areas of industrial automation, process control, data acquisition, and telecommunications.
- The various testimonies that Pethia has given include *Internet Security Issues*, presented to the U.S. Senate Judiciary Committee on May 25, 2000, and *Removing Roadblocks to Cyber-Defense*, presented to the Senate Judiciary Subcommittee on Technology, Terrorism, and Government Information on March 28, 2000. Pethia also gave testimony to the U.S. House Committee on Science, Subcommittee on Technology hearing about the effects of the Melissa computer virus and possible actions to prevent future viruses from affecting networks (April 1999). In September 1999, he presented testimony to the Pennsylvania State Legislature on the current security situation of e-commerce and related issues of Internet security.
- Other presentations that Pethia has given include *Computer Security Incident Trends and Predictions* for the Interpol/Federal Bureau of Investigation Conference (February 1999); *Security Incident Data Sharing and Analysis* for the Information Sharing Conference held by the Critical Infrastructure Assurance Office at the White House Conference Center (January 1999); and *Computer Crime Update: Trends in Criminal Tradecraft* for the U.S. Department of Justice Computer Telecommunications Coordinators Conference (February 1998). Pethia also co-authored a report titled *Report to the President's Commission on Critical Infrastructure Protection*.

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# Linda Northrop

- Linda Northrop has over 35 years of experience in the software development field as practitioner, researcher, manager, consultant, and educator. She is currently director of the Product Line Systems Program at the Carnegie Mellon University's Software Engineering Institute (SEI) where she leads the SEI work in software architecture, software product lines, and predictable component engineering. Before joining the SEI, she was associated with both the United States Air Force Academy and the State University of New York as professor of computer science, and with both Eastman Kodak and IBM as a software engineer.
- Linda is a recipient of the Carnegie Science Award of Excellence for Information Technology and the New York State Chancellor's Award for Excellence in Teaching. She is coauthor of *Software Product Lines: Practices and Patterns* and chaired the first and second international Software Product Line Conferences (SPLC1 and SPLC2). She is a frequently invited speaker and has given keynotes at among others the European Software Engineering Process Group (ESEPG) Conference, the Aspect-Oriented System Development (AOSD) Conference, and the International Conference on Software Engineering (ISCE). In addition, she is the current OOPSLA Steering Committee Chair, was the OOPSLA 2001 Conference Chair, is a member of ACM and the IEEE Computer Society, and from 1993-2000 was a Computer Science Accreditation Commissioner.

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# Scott Hissam

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- Scott A. Hissam is a senior member of the technical staff for the Software Engineering Institute (SEI) at Carnegie Mellon University (CMU), where he conducts research on component-based software engineering and open source software .
- Hissam's publications include one book (co-author of Building Systems from Commercial Components, Addison-Wesley 2001), papers published in international journals including Institute of Electrical and Electronics Engineers (IEEE) Internet Computing and Journal of Software Maintenance, and numerous technical reports published by CMU.
- Prior to his position at the SEI, Hissam held positions at Lockheed Martin, Bell Atlantic, and the Department of Defense (DoD). He has a BS degree in Computer Science from West Virginia University.



# Daniel Plakosh

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- Daniel Plakosh is a senior member of the technical staff in the Networked Systems Survivability Program at the Software Engineering Institute (SEI). The CERT® Coordination Center is a part of this program.
- As a senior vulnerability analyst, Plakosh currently collects, analyzes, and disseminates information about computer security defects, exposures, and vulnerabilities. Current responsibilities include investigating technologies, techniques, and methodologies to aid in the discovery of software vulnerabilities as well as techniques that help developers produce secure software.
- Plakosh has 20 years of software development experience in defense, research and industry. Prior to joining the SEI, Plakosh was the lead software engineer for the Systems Engineering Department at the Naval Surface Warfare Center (NSWCDD). Plakosh's principal areas of expertise include; real-time distributed systems, network communications and protocols, systems engineering, real-time 2D and 3D graphics, and UNIX and Win32 OS internals.
- Much of Plakosh's recent experience has been redesigning legacy systems. Plakosh is a coauthor of the Addison-Wesley book Modernizing Legacy Systems: Software Technologies, Engineering Processes, and Business Practices. He is also the coauthor of over 30 papers on component-based software engineering, real-time systems, legacy system modernization, distributed communications and the author of two chapters in the Addison-Wesley book Building Systems from Commercial Components.



# Carol Sledge

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- Dr. Carol A. Sledge is a senior member of the technical staff for the Networked Systems Survivability (NSS) Program at the Software Engineering Institute (SEI).

Sledge's current work with the NSS Program includes executive education and development and transition of information assurance courses and curricula to institutions of higher education. Sledge participates in the NSF-funded Information Assurance Capacity Building Program, targeting Minority Serving Institutions, at Carnegie Mellon University. Her previous focus was the establishment and maturation of worldwide computer security incident response teams (CSIRTs). In previous positions at the SEI, Sledge developed courses on, and investigated acquisition and management issues of COTS-based systems and open systems; she led a team within the academic education program, and developed continuing education courses for software professionals. She also taught software project management in the Master of Software Engineering program at Carnegie Mellon University.

Prior to joining the SEI, Sledge held positions managing the acquisition, development, and support of large, multi-platform system software product lines in a number of Fortune 500 companies. She also co-founded a venture-capital funded start-up company that produced business application development environments. She has developed and taught a variety of computer science and software engineering courses in universities.

Dr. Sledge received a BS in mathematics, an MS in computer science, and a PhD in computer science from the University of Pittsburgh. She is a member of the Association for Computing Machinery (ACM), a member of the Institute of Electrical and Electronics Engineers (IEEE) Computer Society, and a member of the American Management Association.

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# Abstracts

# Coding Flaws That Lead to Security Failures

- Coding flaws that occur during the development of software can result in unimaginable security failures. These software defects are often caused by careless coding or because the software developer often does not understand how these often seemingly small software defects can be exploited by a malicious user. Prominent software defects that can lead to security failures include buffer overflows, format string errors, and integer range errors.
- In this presentation, we will describe each of these coding flaws in detail and examine how they can be exploited and prevented.

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# Registration Information

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- TBA